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INTRODUCTION.

This REVIEW treats generally the meteorological conditions of the United States and Canada for December, 1887, and is based upon the reports of regular and voluntary observers of both countries. Descriptions of the storms that occurred over the north Atlantic Ocean are also given, and their paths shown on chart i, on which also appear the distribution of icebergs and the limits of fog-belts west of the fortieth meridian.

A noteworthy feature of this month was the severe weather which prevailed over the West India Islands during the first decade, attending the passage of three cyclones, most unusual occurrences for December, two of which moved northwest to the vicinity of Bermuda, and thence recurved northeastward, and one advanced westward over the Caribbean Sea.

The mean temperatures were below the normal in all parts of the country, except on the north Pacific coast, in Florida, and from the upper lakes eastward to the New England and middle Atlantic coasts, in which districts the month was slightly warmer than the average. The deficiencies in the monthly mean temperatures were greatest over the region from the Rio Grande Valley northwestward to Arizona and Utah, where they ranged from 4° to 8°.

The rainfall was deficient over an area extending from eastern Tennessee and western North Carolina northward to the lower lakes, and also in California and portions of the Rocky Mountain region; it was above the average on the Atlantic and Gulf coasts, in the Missouri, Mississippi, and lower Ohio valleys, the excess being most marked in the Gulf states and Rio Grande Valley.

Under "Notes and extracts" will be found a table showing means of a series of hourly barometric observations at Washington City for a period of eight months—May to December, 1887, with a brief discussion of same.

Chart iii for this month shows the normal and current temperature curves for three stations in addition to those given in November chart.

In the preparation of this REVIEW the following data, received up to January 20, 1888, have been used, viz., the regular tri-daily weather-charts, containing data of simultaneous observations taken at 133 Signal Service stations and 23 Canadian stations, as telegraphed to this office; 173 monthly journals and 171 monthly means from the former and 23 monthly means from the latter; 260 monthly registers from voluntary observers; 52 monthly registers from United States Army post surgeons; marine records; international simultaneous observations; marine reports through the co-operation of the Hydrographic Office, United States Navy, and the "New York Herald Weather Service;" monthly weather reports from the local weather services of Alabama, Illinois, Indiana, Louisiana, Michigan, Mississippi, Missouri, Nebraska, New England, New Jersey, North Carolina, Ohio, Oregon, Pennsylvania, South Carolina, and Tennessee, and the Central Pacific Railway Company; trustworthy newspaper extracts, and special reports.

ATMOSPHERIC PRESSURE (expressed in inches and hundredths).

The distribution of mean pressure for December, 1887, determined from the tri-daily telegraphic observations of the Signal Service, is shown by isobarometric lines on chart ii.

The area of maximum mean pressure for December, 1887, embraces the middle plateau, and is indicated by the isobar of 30.20, which incloses portions of Oregon, Idaho, Utah, and Nevada; areas of minimum pressure occupy the north Pacific coast and the Gulf of Saint Lawrence, where the mean falls to 29.95 and slightly below. The stations reporting the extreme monthly means are: Port Angeles, Wash., 29.93, and Winnemucca, Nev., 30.26. Over the greater part of the country east of the Rocky Mountains the range of mean pressure is between 30.0 and 30.1.

As compared with November an increase in the monthly means is shown in the central and southern Rocky Mountain regions and thence westward to the Pacific coast; an increase also occurs in the upper Missouri valley, and from the lower lakes and Ohio Valley eastward to the Atlantic. While the excess is generally less than .05 it amounts to .10 on the middle Pacific coast and from .05 to .09 in the New England and middle Atlantic states. In other districts than those above-named the mean pressure for December is below that for November, but the deficiency nowhere exceeds .04, except on the west Gulf coast, where it amounts to .05.

The departures from the normal pressure at the various Signal Service stations are given in the table of miscellaneous meteorological data. The mean pressure for December, 1887, is above the normal, as follows: in the middle and southern Rocky Mountain districts and thence westward to the Pacific coast, in the states on the Atlantic from the Carolinas northward, in the upper Ohio valley, along the northern border from Montana eastward, and in southern Florida. In all other districts the mean pressure is below the normal. The most marked excess, .10, occurs on the central Pacific coast, and the greatest deficiency, .05, on the west Gulf coast.

BAROMETRIC RANGES.

The monthly barometric ranges at the various Signal Service stations are also given in the table of miscellaneous meteorological data. The ranges, as usual, conform to the general rule, that is, they increase with the latitude and decrease slightly, though somewhat irregularly, with increasing longitude. In all of the northern districts the barometer ranges of December, 1887, are decidedly greater than the normal for the month, the difference amounting to .20 on the north Pacific coast, to .30 in the lower Missouri and upper Mississippi valleys, and from .50 to .60 in New England. In the states bordering on the Atlantic the extreme ranges are: .47 at Key West,